

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An image forming apparatus which is to be connected to a network and in which a plurality of applications can be installed, the image forming apparatus comprising:

a user information input part for a user to input user information and user authentication information;

an external server communication part, which receives pre-registered user authentication information from an external server through the network;

one or more authentication parts, which authenticate the user authentication information based on the received pre-registered user authentication information; and

a use control part for receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for one or more applications according to the received one or more authentication results.

2. (Currently Amended) The image forming apparatus as claimed in claim 1, wherein the use control part refers to information indicating the one or more authentication parts that correspond to an application, causes the one or more authentication parts to perform authentication process when the application is used, and sends an authentication result to the application.

3. (Currently Amended) The image forming apparatus as claimed in claim 1, wherein the use control part refers to information indicating the one or more applications that correspond to an authentication part, and sends an authentication result of the authentication part to an application in the one or more applications when the application is used.

4. (Original) The image forming apparatus as claimed in claim 1, wherein the use control part includes a part for controlling use restriction for a function of the application.

5. (Original) The image forming apparatus as claimed in claim 1, wherein the use control part sends an authentication result indicating success of authentication to the one or more applications only when authentication by all of the one or more authentication parts succeeds.

6. (Currently Amended) The image forming apparatus as claimed in claim 1, wherein the use ~~restriction~~ control part sends an authentication result indicating success of authentication to the one or more applications when authentication by at least one authentication part in the one or more authentication parts succeeds.

7. (Original) The image forming apparatus as claimed in claim 1, wherein each of the one or more authentication part is an application or an apparatus connected to the image forming apparatus.

8. (Currently Amended) The image forming apparatus as claimed in claim 1, wherein ~~the authentication part performs authentication by using user authentication information input by a user and~~ the pre-registered user authentication information is registered beforehand in the external server.

9. (Currently Amended) The image forming apparatus as claimed in claim 1, wherein ~~the authentication part performs authentication by using~~ the user authentication information

includes billing information, ~~input by a user and the pre-registered user authentication~~
information includes available billing information ~~registered beforehand.~~

10. (Currently Amended) The image forming apparatus as claimed in claim 1, the image forming apparatus further comprising hardware resources used for image forming processes, and control services that perform processes of ~~[[the]]~~ a system side including control of the hardware resources,

wherein the image forming apparatus is configured ~~so as to be able~~ to install a plurality of applications separately from the control services, and the image forming apparatus includes the use control part as a control service.

11. (Currently Amended) The image forming apparatus as claimed in claim 1, ~~the authentication part comprising: wherein~~

the ~~[[a]]~~ user information input part is configured for a user to input user identification information and user authentication information to be pre-registered in the external server,
~~[[;]]~~

~~[[an]]~~ the external server communication part ~~for sending~~ sends the user identification information and the user authentication information to be pre-registered in the external server input by the user to ~~[[an]]~~ the external server, ~~and receiving user authentication information corresponding to the user identification information from the external server;~~ and

~~[[a]]~~ the authentication part determines ~~for determining~~ whether the pre-registered user authentication information received from the external server is ~~the~~ same as the user authentication information input by the user, and sending ~~a determination~~ an authentication result to the use control part.

12. (Currently Amended) The image forming apparatus as claimed in claim 1, ~~the authentication part~~ further comprising:

a user information receiving part for receiving, from a client terminal, user identification information and ~~first~~ billing information indicating usage of the image forming apparatus by a user to be pre-registered in the external server, wherein [[:]]

[[an]] the external server communication part ~~for sending~~ sends the user identification information and the billing information to be pre-registered in the external server to [[an]] the external server, and ~~receiving~~ receives the second billing information pre-registered in the external server and corresponding to the user ~~identification~~ information input by the user, from the external server, and [[:]]

~~a billing process~~ the authentication part ~~for comparing~~ compares the first billing information input by a user received from the client terminal with the second pre-registered billing information received from the external server, and sends a comparing result to the use control part.

13. (Currently Amended) The image forming apparatus as claimed in claim 12, wherein the client terminal reads the user identification information and the ~~first~~ billing information to be pre-registered in the external server from an external recording medium; ~~and the user information receiving part receives the user identification information and the first billing information from the client terminal.~~

14. (Currently Amended) The image forming apparatus as claimed in claim 11, wherein the external server is a Lightweigh Directiry Access Protocol LDAP server ~~on a~~ network.

15. (Currently Amended) A use control method for an application in an image forming apparatus which is connected to a network and in which a plurality of applications can be installed, the use control method comprising:

receiving a user information and user authentication information input by a user;

receiving pre-registered user authentication information from an external server through the network;

authenticating the user authentication information based on the pre-registered user authentication information by one or more authentication parts; and

~~a use control step for~~ receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for one or more applications according to the received one or more authentication results.

16. (Currently Amended) The use control method as claimed in claim 15, ~~wherein the image-forming apparatus refers~~ further comprising:

referring to information indicating one or more authentication parts that correspond to an application[[,]];

~~causes~~ causing the one or more authentication parts to perform authentication process when the application is used[[,]]; and

~~sends~~ sending an authentication result to the application.

17. (Currently Amended) The use control method as claimed in claim 15, ~~wherein the image-forming apparatus refers~~ further comprising:

referring to information indicating one or more applications that correspond to an authentication part[[,]]; and

~~sends~~ sending an authentication result ~~of the authentication part~~ to an application in the one or more applications when the application is used.

18. (Currently Amended) The use control method as claimed in claim 15, ~~wherein the image forming apparatus controls~~ further comprising:

controlling use restriction for a function of an application.

19. (Currently Amended) The use control method as claimed in claim 15, ~~wherein the image forming apparatus sends~~ further comprising:

sending an authentication result indicating success of authentication to the one or more applications only when authentication by all of the one or more authentication parts succeeds.

20. (Currently Amended) The use control method as claimed in claim 15, ~~wherein the image forming apparatus sends~~ further comprising:

sending an authentication result indicating success of authentication to the one or more applications when authentication by at least one authentication part in the one or more authentication parts succeeds.

21. (Original) The use control method as claimed in claim 15, wherein each of the one or more authentication part is an application or an apparatus connected to the image forming apparatus.

22. (Currently Amended) The use control method as claimed in claim 15, ~~wherein the authentication part performs authentication by using user authentication information input by~~

~~a user and the pre-registered~~ user authentication information is pre-registered ~~registered~~
~~beforehand~~ in the external server.

23. (Currently Amended) The use control method as claimed in claim 15, wherein the
user authentication information includes authentication part performs authentication by using
billing information, ~~input by a user and the pre-registered user authentication information~~
includes available billing information ~~registered beforehand.~~

24. (Currently Amended) The use control method as claimed in claim 15, ~~the image~~
~~forming apparatus further comprising hardware resources used for image forming processes,~~
~~and control services that perform processes of the system side including control of the~~
~~hardware resources,~~

~~wherein the image forming apparatus is configured so as to be able to install~~ further
comprising:

installing ~~[[a]] the plurality of applications separately from [[the]] control services~~
that perform processes of a system side, wherein

~~and the use control step is performed by a the control service~~ receives the one or more
authentication results and controls use restriction for the one or more applications according
to the received one or more authentication results.

25. (Currently Amended) The use control method as claimed in claim 15, ~~the~~
~~authentication part further~~ comprising:

~~a user information input part for a user to input~~ inputting user identification
information and user authentication information to be pre-registered in the external server;

~~an external server communication part for sending the user identification information~~
and the user authentication information to be pre-registered in the external server input by the user to an external server, ~~and receiving user authentication information corresponding to the user identification information from the external server;~~ and

~~a part for determining whether the~~ pre-registered user authentication information received from the external server is the same as the user authentication information input by the user.

26. (Currently Amended) The use control method as claimed in claim 15, ~~the authentication part~~ further comprising:

~~a user information receiving part for receiving, from a client terminal, user~~
identification information and ~~first~~ billing information indicating usage of the image forming apparatus by a user to be pre-registered in the external server;

~~an external server communication part for sending the user identification information~~
and the billing information to be pre-registered in the external server to an external server[, and]];

receiving ~~second~~ the billing information pre-registered in the external server and corresponding to the user ~~identification~~ information input by the user, from the external server; and

~~a billing process part for comparing the first billing information~~ input by a user
~~received from the client terminal~~ with the ~~second~~ pre-registered billing information received from the external server.

27. (Currently Amended) The use control method as claimed in claim 26, wherein the client terminal reads the user identification information and the ~~first~~ billing information to be

~~pre-registered in the external server from an external recording medium, and the user information receiving part receives the user identification information and the first billing information from the client terminal.~~

28. (Currently Amended) The use control method as claimed in claim 25, wherein the external server is a Lightweigh Directiry Access Protocol LDAP server on a network.

29. (Currently Amended) An image forming apparatus which is to be connected to a network and in which a plurality of applications can be installed, the image forming apparatus comprising:

a user information input part for a user to input user information and user authentication information;

an external server communication part, which receives pre-registered user authentication information from an external server through the network;

an authentication part, which authenticates the user authentication information based on the received pre-registered user authentication information;

a display part for displaying a screen, on an operation panel of the image forming apparatus, for selecting one or more applications for ~~[[an]]~~ the authentication part, in which user authentication by the authentication part is applied to use of the one or more applications; and

a use control part for receiving an authentication result from the authentication part, and controlling use restriction for the one or more applications according to the authentication result.

30. (Original) The image forming apparatus as claimed in claim 29, wherein information input from the screen is stored in the image forming apparatus as information indicating the one or more applications corresponding to the authentication part.

31. (Original) The image forming apparatus as claimed in claim 29, wherein the display part displays a screen for selecting one or more functions of an application to which user authentication by the authentication part is applied.

32. (Currently Amended) An image forming apparatus which is to be connected to a network and in which a plurality of applications can be installed, the image forming apparatus comprising:

a user information input part for a user to input user information and user authentication information;

an external server communication part, which receives pre-registered user authentication information from an external server through the network;

one or more authentication parts, which authenticate the user authentication information based on the received pre-registered user authentication information; and

a display part for displaying a screen, on an operation panel of the image forming apparatus, for selecting the one or more authentication parts for an application, in which user authentication by the one or more authentication parts ~~can be~~ is applied to use of the application; and

a use control part for receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for the application according to the one or more authentication results.

33. (Original) The image forming apparatus as claimed in claim 32, wherein information input from the screen is stored in the image forming apparatus as information indicating the one or more authentication parts corresponding to the application.

34. (Original) The image forming apparatus as claimed in claim 32, wherein the display part displays a screen for setting relationship among the one or more authentication parts.

35. (Currently Amended) The image forming apparatus as claimed in claim 32, wherein the display part displays a screen for setting information indicating that user authentication for use of the application succeeds only ~~[[if]]~~ when authentication by all of the one or more authentication parts succeeds.

36. (Currently Amended) The image forming apparatus as claimed in claim 32, wherein the display part displays a screen for setting information indicating that user authentication for use of the application succeeds ~~[[if]]~~ when authentication by at least one of the one or more authentication parts succeeds.

37. (Canceled)

38. (Currently Amended) The image forming apparatus as claimed in claim 29, wherein ~~the authentication part performs authentication by using~~ the user authentication information includes billing information, ~~input by a user and the pre-registered user authentication information includes~~ available billing information ~~registered beforehand~~.

39. (Currently Amended) The image forming apparatus as claimed in claim 29, the image forming apparatus further comprising hardware resources used for image forming processes, and control services that perform processes of ~~[[the]]~~ a system side including control of the hardware resources,

wherein the image forming apparatus is configured ~~so as to be able~~ to install a plurality of applications separately from the control services, and the image forming apparatus includes the use control part and the display part as a control service.

40. (Currently Amended) A use control method for an application in an image forming apparatus which is connected to a network and in which a plurality of applications can be installed, the use control method comprising:

receiving a user information and user authentication information input by a user;

receiving pre-registered user authentication information from an external server through the network;

~~a display step for displaying a screen, on an operation panel of the image forming apparatus,~~ for selecting one or more applications for an authentication part, in which user authentication by the authentication part is applied to use of the one or more applications; ~~and~~

authenticating the user authentication information based on the pre-registered user authentication information by the authentication part; and

~~a use control step for receiving an authentication result from the authentication part,~~ and controlling use restriction for the one or more applications according to the authentication result.

41. (Currently Amended) The use control method as claimed in claim 40, ~~wherein~~ further comprising:

storing information input from the screen ~~is stored~~ in the image forming apparatus as information indicating the one or more applications corresponding to the authentication part.

42. (Currently Amended) The use control method as claimed in claim 40, ~~wherein the image-forming apparatus displays~~ further comprising:

displaying a screen for selecting one or more functions of an application to which user authentication by the authentication part is applied.

43. (Currently Amended) A use control method for an application in an image forming apparatus which is connected to a network and in which a plurality of applications can be installed, the use control method comprising:

receiving a user information and user authentication information input by a user;

receiving pre-registered user authentication information from an external server through the network;

~~a display step for displaying a screen, on an operation panel of the image-forming apparatus,~~ for selecting one or more authentication parts for an application, in which user authentication by the one or more authentication parts ~~can be~~ is applied to use of the application; and

authenticating the user authentication information based on the pre-registered user authentication information by the one or more authentication parts; and

~~a use control step for~~ receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for the application according to the one or more authentication results.

44. (Currently Amended) The use control method as claimed in claim 43, ~~wherein~~
further comprising:

storing information input from the screen ~~is stored~~ in the image forming apparatus as
information indicating the one or more authentication parts corresponding to the application.

45. (Currently Amended) The use control method as claimed in claim 43, ~~wherein the~~
~~image-forming apparatus displays~~ further comprising:

displaying a screen for setting relationship among the one or more authentication
parts.

46. (Currently Amended) The use control method as claimed in claim 43, ~~wherein the~~
~~image-forming apparatus displays~~ further comprising:

displaying a screen for setting information indicating that user authentication for use
of the application succeeds only ~~[[if]]~~ when authentication by all of the one or more
authentication parts succeeds.

47. (Currently Amended) The use control method as claimed in claim 43, ~~wherein the~~
~~image-forming apparatus displays~~ further comprising:

displaying a screen for setting information indicating that user authentication for use
of the application succeeds ~~[[if]]~~ when authentication by at least one of the one or more
authentication parts succeeds.

48. (Currently Amended) The use control method as claimed in claim 40, ~~wherein the~~
~~authentication part performs authentication by using user authentication information input by~~

~~a user and the pre-registered~~ user authentication information is pre-registered in the external server registered beforehand.

49. (Currently Amended) The use control method as claimed in claim 40, wherein the user authentication information includes authentication part performs authentication by using billing information, input by a user and the pre-registered user authentication information includes available billing information registered beforehand.

50. (Currently Amended) The use control method as claimed in claim 40, ~~the image forming apparatus further comprising hardware resources used for image forming processes, and control services that perform processes of the system side including control of the hardware resources,~~

~~wherein the image forming apparatus is configured so as to be able to install~~ further comprising:

installing a plurality of applications separately from [[the]] control services that perform processes of a system side, wherein

~~and the display step and the use control step are performed by a~~ the control service receives the one or more authentication results and controls use restriction for the one or more applications according to the received one or more authentication results.